



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R07-OAR-2021-0851; EPA-HQ-OAR-2021-0663; FRL-9425-01-R7]

Air Plan Disapproval; Missouri Interstate Transport of Air Pollution for the 2015 8-hour Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Pursuant to the Federal Clean Air Act (CAA or the Act), the Environmental Protection Agency (EPA) is proposing to disapprove a State Implementation Plan (SIP) submittal from Missouri regarding interstate transport for the 2015 8-hour ozone national ambient air quality standards (NAAQS). The “good neighbor” or “interstate transport” provision requires that each state’s SIP contain adequate provisions to prohibit emissions from within the state from significantly contributing to nonattainment or interfering with maintenance of the NAAQS in other states. This requirement is part of the broader set of “infrastructure” requirements, which are designed to ensure that the structural components of each state’s air quality management program are adequate to meet the state’s responsibilities under the CAA. This disapproval, if finalized, will establish a 2-year deadline for the EPA to promulgate a Federal Implementation Plan (FIP) to address the relevant interstate transport requirements, unless the EPA approves a subsequent SIP submittal that meets these requirements. Disapproval does not start a mandatory sanctions clock.

DATES: Written comments must be received on or before **[insert date 60 days after date of publication in the Federal Register]**.

ADDRESSES: You may send comments, identified as Docket No. EPA-R07-OAR-2021-0851, by any of the following methods: Federal eRulemaking Portal at <https://www.regulations.gov> following the online instructions for submitting comments or via email to

stone.william@epa.gov. Include Docket ID No. EPA-R07-OAR-2021-0851 in the subject line of the message.

Instructions: All submissions received must include the Docket ID No. for this rulemaking.

Comments received may be posted without change to <https://www.regulations.gov/>, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the “Public Participation” heading of the **SUPPLEMENTARY INFORMATION** section of this document. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room are open to the public by appointment only to reduce the risk of transmitting COVID-19. Our Docket Center staff also continues to provide remote customer service via email, phone, and webform. For further information on EPA Docket Center services and the current status, please visit us online at <https://www.epa.gov/dockets>.

FOR FURTHER INFORMATION CONTACT: William Stone, Environmental Protection Agency, Region 7 Office, Air Quality Planning Branch, 11201 Renner Boulevard, Lenexa, Kansas 66219; telephone number: (913) 551-7714; email address: stone.william@epa.gov.

SUPPLEMENTARY INFORMATION: *Public participation:* Submit your comments, identified by Docket ID No. EPA-R07-OAR-2021-0851, at <https://www.regulations.gov> (our preferred method), or the other methods identified in the **ADDRESSES** section. Once submitted, comments cannot be edited or removed from the docket. The EPA may publish any comment received to its public docket. Do not submit to EPA’s docket at <https://www.regulations.gov> any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e. on the web, cloud, or other file sharing system).

There are two dockets supporting this action, EPA-R07-OAR-2021-0851 and EPA-HQ-OAR-2021-0663. Docket No. EPA-R07-OAR-2021-0851 contains information specific to Missouri, including the notice of proposed rulemaking. Docket No. EPA-HQ-OAR-2021-0663 contains additional modeling files, emissions inventory files, technical support documents, and other relevant supporting documentation regarding interstate transport of emissions for the 2015 8-hour ozone NAAQS which are being used to support this action. All comments regarding information in either of these dockets are to be made in Docket No. EPA-R07-OAR-2021-0851. For additional submission methods, please contact William Stone, (913) 551-7714, stone.william@epa.gov. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>. Due to public health concerns related to COVID-19, the EPA Docket Center and Reading Room are open to the public by appointment only. Our Docket Center staff also continues to provide remote customer service via email, phone, and webform. For further information and updates on EPA Docket Center services, please visit us online at <https://www.epa.gov/dockets>.

The EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention (CDC), local area health departments, and our Federal partners so that we can respond rapidly as conditions change regarding COVID-19.

The index to the docket for this action, Docket No. EPA-R07-OAR-2021-0851, is available electronically at www.regulations.gov. While all documents in the docket are listed in the index, some information may not be publicly available due to docket file size restrictions or content (e.g., CBI).

Throughout this document, “we,” “us,” and “our” means the EPA.

I. Background

A. Description of Statutory Background

On October 1, 2015, the EPA promulgated a revision to the ozone NAAQS (2015 8-hour ozone NAAQS), lowering the level of both the primary and secondary standards to 0.070 parts per million (ppm).¹ Section 110(a)(1) of the CAA requires states to submit, within 3 years after promulgation of a new or revised standard, SIP submissions meeting the applicable requirements of section 110(a)(2).² One of these applicable requirements is found in CAA section 110(a)(2)(D)(i)(I), otherwise known as the “interstate transport” or “good neighbor” provision, which generally requires SIPs to contain adequate provisions to prohibit in-state emissions activities from having certain adverse air quality effects on other states due to interstate transport of pollution. There are two so-called “prongs” within CAA section 110(a)(2)(D)(i)(I). A SIP for a new or revised NAAQS must contain adequate provisions prohibiting any source or other type of emissions activity within the state from emitting air pollutants in amounts that will significantly contribute to nonattainment of the NAAQS in another state (prong 1) or interfere with maintenance of the NAAQS in another state (prong 2). The EPA and states must give independent significance to prong 1 and prong 2 when evaluating downwind air quality problems under CAA section 110(a)(2)(D)(i)(I).³

B. Description of the EPA’s Four Step Interstate Transport Regulatory Process

The EPA is using the 4-step interstate transport framework (or 4-step framework) to evaluate the state’s SIP submittals addressing the interstate transport provision for the 2015 8-hour ozone NAAQS. The EPA has addressed the interstate transport requirements of CAA section 110(a)(2)(D)(i)(I) with respect to prior ozone NAAQS in several regional regulatory actions, including the Cross-State Air Pollution Rule (CSAPR), which addressed interstate transport with respect to the 1997 ozone NAAQS as well as the 1997 and 2006 fine particulate

¹ National Ambient Air Quality Standards for Ozone, Final Rule, 80 FR 65292 (October 26, 2015). Although the level of the standard is specified in the units of ppm, ozone concentrations are also described in parts per billion (ppb). For example, 0.070 ppm is equivalent to 70 ppb.

² SIP revisions that are intended to meet the applicable requirements of section 110(a)(1) and (2) of the CAA are often referred to as infrastructure SIPs and the applicable elements under section 110(a)(2) are referred to as infrastructure requirements.

³ See *North Carolina v. EPA*, 531 F.3d 896, 909-11 (D.C. Cir. 2008).

matter standards,⁴ and the Cross-State Air Pollution Rule Update (CSAPR Update)⁵ and the Revised CSAPR Update, both of which addressed the 2008 ozone NAAQS.⁶

Through the development and implementation of the CSAPR rulemakings and prior regional rulemakings pursuant to the interstate transport provision,⁷ the EPA, working in partnership with states, developed the following 4-step interstate transport framework to evaluate a state's obligations to eliminate interstate transport emissions under the interstate transport provision for the ozone NAAQS: (1) identify monitoring sites that are projected to have problems attaining and/or maintaining the NAAQS (i.e., nonattainment and/or maintenance receptors); (2) identify states that impact those air quality problems in other (i.e., downwind) states sufficiently such that the states are considered "linked" and therefore warrant further review and analysis; (3) identify the emissions reductions necessary (if any), applying a multifactor analysis, to eliminate each linked upwind state's significant contribution to nonattainment or interference with maintenance of the NAAQS at the locations identified in Step 1; and (4) adopt permanent and enforceable measures needed to achieve those emissions reductions.

C. Background on the EPA's Ozone Transport Modeling Information

The EPA has released several documents containing information relevant to evaluating interstate transport with respect to the 2015 8-hour ozone NAAQS. First, on January 6, 2017, the EPA published a notice of data availability (NODA) in which we requested comment on preliminary interstate ozone transport data including projected ozone design values (DVs) and

⁴ See Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 FR 48208 (Aug. 8, 2011).

⁵ Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 FR 74504 (Oct. 26, 2016).

⁶ In 2019, the D.C. Circuit Court of Appeals remanded the CSAPR Update to the extent it failed to require upwind states to eliminate their significant contribution by the next applicable attainment date by which downwind states must come into compliance with the NAAQS, as established under CAA section 181(a). *Wisconsin v. EPA*, 938 F.3d 303, 313 (D.C. Cir. 2019). The Revised CSAPR Update for the 2008 Ozone NAAQS, 86 FR 23054 (April 30, 2021), responded to the remand of the CSAPR Update in *Wisconsin* and the vacatur of a separate rule, the "CSAPR Close-Out," 83 FR 65878 (December 21, 2018), in *New York v. EPA*, 781 F. App'x. 4 (D.C. Cir. 2019).

⁷ In addition to the CSAPR rulemakings, other regional rulemakings addressing ozone transport include the "NO_x SIP Call," 63 FR 57356 (October 27, 1998), and the "Clean Air Interstate Rule" (CAIR), 70 FR 25162 (May 12, 2005).

interstate contributions for 2023 using a 2011 base year platform.⁸ In the NODA, the EPA used the year 2023 as the analytic year for this preliminary modeling because that year aligns with the expected attainment year for Moderate ozone nonattainment areas for the 2015 8-hour ozone NAAQS.⁹ On October 27, 2017, we released a memorandum (October 2017 memorandum) containing updated modeling data for 2023, which incorporated changes made in response to comments on the NODA and noted that the modeling may be useful for states developing SIPs to address interstate transport obligations for the 2008 ozone NAAQS.¹⁰ On March 27, 2018, we issued a memorandum (March 2018 memorandum) noting that the same 2023 modeling data released in the 2017 memorandum could also be useful for identifying potential downwind air quality problems with respect to the 2015 8-hour ozone NAAQS at Step 1 of the 4-step interstate transport framework.¹¹ The March 2018 memorandum also included the then newly available contribution modeling data for 2023 to assist states in evaluating their impact on potential downwind air quality problems for the 2015 8-hour ozone NAAQS under Step 2 of the 4-step interstate transport framework.¹² The EPA subsequently issued two more memoranda in August and October 2018, providing additional information to states developing interstate transport SIP submissions for the 2015 8-hour ozone NAAQS concerning, respectively, potential contribution thresholds that may be appropriate to apply in Step 2 of the 4-step interstate transport framework,

⁸ See Notice of Availability of the Environmental Protection Agency's Preliminary Interstate Ozone Transport Modeling Data for the 2015 8-hour Ozone National Ambient Air Quality Standard (NAAQS), 82 FR 1733 (January 6, 2017).

⁹ 82 FR at 1735.

¹⁰ See Information on the Interstate Transport State Implementation Plan Submissions for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I), October 27, 2017, available in the docket ID No. EPA-HQ-OAR-2021-0663.

¹¹ See Information on the Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I), March 27, 2018 ("March 2018 memorandum"), available in docket ID No. EPA-HQ-OAR-2021-0663.

¹² The March 2018 memorandum, however, provided, "While the information in this memorandum and the associated air quality analysis data could be used to inform the development of these SIPs, the information is not a final determination regarding states' obligations under the good neighbor provision. Any such determination would be made through notice-and-comment rulemaking."

and considerations for identifying downwind areas that may have problems maintaining the standard at Step 1 of the 4-step interstate transport framework.¹³

Since the release of the modeling data shared in the March 2018 memorandum, the EPA performed updated modeling using a 2016-based emissions modeling platform (i.e., 2016v1). This emissions platform was developed under the EPA/Multi-Jurisdictional Organization (MJO)/state collaborative project.¹⁴ This collaborative project was a multi-year joint effort by the EPA, MJOs, and states to develop a new, more recent emissions platform for use by the EPA and states in regulatory modeling as an improvement over the dated 2011-based platform that the EPA had used to project ozone design values and contribution data provided in the 2017 and 2018 memoranda. The EPA used the 2016v1 emissions to project ozone DVs and contributions for 2023. On October 30, 2020, in the Notice of Proposed Rulemaking for the Revised CSAPR Update, the EPA released and accepted public comment on 2023 modeling that used the 2016v1 emissions platform.¹⁵ *See* 85 FR 68964, 68981. Although the Revised CSAPR Update addressed transport for the 2008 ozone NAAQS, the projected design values and contributions from the 2016v1 platform are also useful for identifying downwind ozone problems and linkages with respect to the 2015 ozone NAAQS.¹⁶

Following the Revised CSAPR Update final rule, the EPA made further updates to the 2016 emissions platform to include mobile emissions from the EPA's Motor Vehicle Emission Simulator MOVES3 model¹⁷ and updated emissions projections for electric generating units (EGUs) that reflect the emissions reductions from the Revised CSAPR Update, recent

¹³ *See* Analysis of Contribution Thresholds for Use in Clean Air Act Section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards, August 31, 2018) ("August 2018 memorandum"), and Considerations for Identifying Maintenance Receptors for Use in Clean Air Act Section 110(a)(2)(D)(i)(I) Interstate Transport State Implementation Plan Submissions for the 2015 Ozone National Ambient Air Quality Standards, October 19, 2018, available in docket ID No. EPA-HQ-OAR-2021-0663.

¹⁴ The results of this modeling, as well as the underlying modeling files, are included in docket ID No. EPA-HQ-OAR-2021-0663.

¹⁵ *See* 85 FR 68964, 68981.

¹⁶ *See* the Air Quality Modeling Technical Support Document for the Final Revised Cross-State Air Pollution Rule Update, included in the Headquarters docket ID No. EPA-HQ-OAR-2021-0663.

¹⁷ Additional details and documentation related to the MOVES3 model can be found at <https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>.

information on plant closures, and other sector trends. The construct of the updated emissions platform, 2016v2, is described in the emissions modeling technical support document (TSD) for this proposed rule.¹⁸ The EPA performed air quality modeling of the 2016v2 emissions using the most recent public release version of the Comprehensive Air Quality Model with Extensions (CAMx) photochemical modeling, version 7.10. with the 2016 base year and 2023 future year emissions developed as part of the 2016v2 emissions platform.¹⁹ The EPA now proposes to rely on modeling based on the updated and newly available 2016v2 air quality modeling in evaluating these submissions with respect to Steps 1 and 2 of the 4-step interstate transport framework. By using the updated modeling results, the EPA is using the most current and technically appropriate information for this proposed rulemaking. Section III of this document and the Air Quality Modeling TSD included in the docket for this proposal contain additional detail on the modeling performed using the 2016v2 emissions. In this document, the EPA is accepting public comment on this updated 2023 modeling, which uses a 2016 emissions platform. Details on the air quality modeling and the methods for projecting design values and determining contributions in 2023 are described in the Air Quality Modeling TSD for 2015 Ozone NAAQS Transport SIP Proposed Actions. Comments on the EPA's air quality modeling should be submitted in the Regional docket for this action, docket ID No. EPA-R07-OAR-2021-0851. Comments are not being accepted in docket EPA-HQ-OAR-2021-0663.

States may have chosen to rely on the results of the EPA modeling and/or alternative modeling performed by states or Multi-Jurisdictional Organizations (MJOs) to evaluate downwind air quality problems and contributions as part of their submissions. In section III we evaluate how Missouri used air quality modeling information in their submission.

¹⁸ See Technical Support Document (TSD) Preparation of Emissions Inventories for the 2016v2 North American Emissions Modeling Platform included in the Headquarters docket ID No. EPA-HQ-OAR-2021-0663.

¹⁹ Ramboll Environment and Health, January 2021, www.camx.com.

D. The EPA's Approach to Evaluating Interstate Transport SIPs for the 2015 8-hour ozone NAAQS

The EPA proposes to apply a consistent set of policy judgments across all states for purposes of evaluating interstate transport obligations and the approvability of interstate transport SIP submittals for the 2015 8-hour ozone NAAQS. These policy judgments reflect consistency with relevant case law and past agency practice as reflected in the CSAPR and related rulemakings. Nationwide consistency in approach is particularly important in the context of interstate ozone transport, which is a regional-scale pollution problem involving many smaller contributors. Effective policy solutions to the problem of interstate ozone transport going back to the NO_x SIP Call have necessitated the application of a uniform framework of policy judgments in order to ensure an “efficient and equitable” approach. *See EME Homer City Generation, LP v. EPA*, 572 U.S. 489, 519 (2014).

In the March, August, and October 2018 memoranda, the EPA recognized that states may be able to establish alternative approaches to addressing their interstate transport obligations for the 2015 8-hour ozone NAAQS that vary from a nationally uniform framework. The EPA emphasized in these memoranda, however, that such alternative approaches must be technically justified and appropriate in light of the facts and circumstances of each particular state's submittal. In general, the EPA continues to believe that deviation from a nationally consistent approach to ozone transport must be substantially justified and have a well-documented technical basis that is consistent with relevant case law. Where states submitted SIPs that rely on any such potential “flexibilities” as may have been identified or suggested in the past, the EPA will evaluate whether the state adequately justified the technical and legal basis for doing so.

The EPA notes that certain concepts included in an attachment to the March 2018 memorandum require unique consideration, and these ideas do not constitute agency guidance with respect to transport obligations for the 2015 ozone NAAQS. Attachment A to the March 2018 memorandum identified a “Preliminary List of Potential Flexibilities” that could potentially

inform SIP development.²⁰ However, the EPA made clear in that Attachment that the list of ideas were not suggestions endorsed by the Agency but rather “comments provided in various forums” on which the EPA sought “feedback from interested stakeholders.”²¹ Further, Attachment A stated, “EPA is not at this time making any determination that the ideas discussed below are consistent with the requirements of the CAA, nor are we specifically recommending that states use these approaches.”²² Attachment A to the March 2018 memorandum, therefore, does not constitute agency guidance, but was intended to generate further discussion around potential approaches to addressing ozone transport among interested stakeholders. To the extent states sought to develop or rely on these ideas in support of their SIP submittals, the EPA will thoroughly review the technical and legal justifications for doing so.

The remainder of this section describes the EPA’s proposed framework with respect to analytic year, definition of nonattainment and maintenance receptors, selection of contribution threshold, and multifactor control strategy assessment.

1. Selection of Analytic Year

In general, the states and the EPA must implement the interstate transport provision in a manner “consistent with the provisions of [title I of the CAA.]” CAA section 110(a)(2)(D)(i). This requires, among other things, that these obligations are addressed consistently with the timeframes for downwind areas to meet their CAA obligations. With respect to ozone NAAQS, under CAA section 181(a), this means obligations must be addressed “as expeditiously as practicable” and no later than the schedule of attainment dates provided in CAA section 181(a)(1).²³ Several D.C. Circuit court decisions address the issue of the relevant analytic year for the purposes of evaluating ozone transport air-quality problems. On September 13, 2019, the D.C. Circuit issued a decision in *Wisconsin v. EPA*, remanding the CSAPR Update to the extent

²⁰ March 2018 memorandum, Attachment A.

²¹ *Id.* at A-1.

²² *Id.*

²³ For attainment dates for the 2015 8-hour ozone NAAQS, refer to CAA section 181(a), 40 CFR 51.1303, and Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, 83 FR 25776 (June 4, 2018, effective Aug. 3, 2018).

that it failed to require upwind states to eliminate their significant contribution by the next applicable attainment date by which downwind states must come into compliance with the NAAQS, as established under CAA section 181(a). 938 F.3d at 313.

On May 19, 2020, the D.C. Circuit issued a decision in *Maryland v. EPA* that cited the *Wisconsin* decision in holding that the EPA must assess the impact of interstate transport on air quality at the next downwind attainment date, including Marginal area attainment dates, in evaluating the basis for the EPA's denial of a petition under CAA section 126(b). *Maryland v. EPA*, 958 F.3d 1185, 1203-04 (D.C. Cir. 2020). The court noted that "section 126(b) incorporates the Good Neighbor Provision," and, therefore, "EPA must find a violation [of section 126] if an upwind source will significantly contribute to downwind nonattainment at the next downwind attainment deadline. Therefore, the Agency must evaluate downwind air quality at that deadline, not at some later date." *Id.* at 1204 (emphasis added). The EPA interprets the court's holding in *Maryland* as requiring the states and the Agency, under the good neighbor provision, to assess downwind air quality as expeditiously as practicable and no later than the next applicable attainment date,²⁴ which is now the Moderate area attainment date under CAA section 181 for ozone nonattainment. The Moderate area attainment date for the 2015 8-hour ozone NAAQS is August 3, 2024.²⁵ The EPA believes that 2023 is now the appropriate year for analysis of interstate transport obligations for the 2015 8-hour ozone NAAQS, because the 2023 ozone season is the last relevant ozone season during which achieved emissions reductions in linked upwind states could assist downwind states with meeting the August 3, 2024, Moderate area attainment date for the 2015 8-hour ozone NAAQS.

²⁴ We note that the court in *Maryland* did not have occasion to evaluate circumstances in which the EPA may determine that an upwind linkage to a downwind air quality problem exists at steps 1 and 2 of the interstate transport framework by a particular attainment date, but for reasons of impossibility or profound uncertainty the Agency is unable to mandate upwind pollution controls by that date. *See Wisconsin*, 938 F.3d at 320. The D.C. Circuit noted in *Wisconsin* that upon a sufficient showing, these circumstances may warrant flexibility in effectuating the purpose of the interstate transport provision.

²⁵ *See* CAA section 181(a); 40 CFR 51.1303; Additional Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards, 83 FR 25776 (June 4, 2018, effective Aug. 3, 2018).

The EPA recognizes that the attainment date for nonattainment areas classified as Marginal for the 2015 8-hour ozone NAAQS was August 3, 2021. Under the *Maryland* holding, any necessary emissions reductions to satisfy interstate transport obligations should have been implemented by no later than this date. At the time of the statutory deadline to submit interstate transport SIPs (October 1, 2018), many states relied upon the EPA modeling of the year 2023, and no state provided an alternative analysis using a 2021 analytic year (or the prior 2020 ozone season). However, the EPA must act on SIP submittals using the information available at the time it takes such action. In this circumstance, the EPA does not believe it would be appropriate to evaluate states' obligations under CAA section 110(a)(2)(D)(i)(I) as of an attainment date that is wholly in the past, because the Agency interprets the interstate transport provision as forward looking. *See* 86 FR 23074; *see also Wisconsin*, 938 F.3d at 322. Consequently, in this proposal the EPA will use the analytical year of 2023 to evaluate each state's CAA section 110(a)(2)(D)(i)(I) SIP submission with respect to the 2015 8-hour ozone NAAQS.

2. Step 1 of the 4-Step Interstate Transport Framework

In Step 1, the EPA identifies monitoring sites that are projected to have problems attaining and/or maintaining the NAAQS in the 2023 analytic year. Where the EPA's analysis shows that a site does not fall under the definition of a nonattainment or maintenance receptor, that site is excluded from further analysis under the EPA's 4-step interstate transport framework. For sites that are identified as a nonattainment or maintenance receptor in 2023, we proceed to the next step of our 4-step interstate transport framework by identifying the upwind state's contribution to those receptors.

The EPA's approach to identifying ozone nonattainment and maintenance receptors in this action is consistent with the approach used in previous transport rulemakings. The EPA's approach gives independent consideration to both the "contribute significantly to nonattainment"

and the “interfere with maintenance” prongs of CAA section 110(a)(2)(D)(i)(I), consistent with the D.C. Circuit’s direction in *North Carolina v. EPA*.²⁶

For the purpose of this proposal, the EPA identifies nonattainment receptors as those monitoring sites that are projected to have average design values that exceed the NAAQS and that are also measuring nonattainment based on the most recent monitored design values. This approach is consistent with prior transport rulemakings, such as the CSAPR Update, where the EPA defined nonattainment receptors as those areas that both currently measure nonattainment and that the EPA projects will be in nonattainment in the future analytic year (i.e., 2023).²⁷

In addition, in this proposal, the EPA identifies a receptor to be a “maintenance” receptor for purposes of defining interference with maintenance, consistent with the method used in the CSAPR and upheld by the D.C. Circuit in *EME Homer City Generation, L.P. v. EPA*, 795 F.3d 118, 136 (D.C. Cir. 2015).²⁸ Specifically, the EPA identified maintenance receptors as those receptors that would have difficulty maintaining the relevant NAAQS in a scenario that takes into account historical variability in air quality at that receptor. The variability in air quality was determined by evaluating the “maximum” future design value at each receptor based on a projection of the maximum measured design value over the relevant period. The EPA interprets the projected maximum future design value to be a potential future air quality outcome consistent with the meteorology that yielded maximum measured concentrations in the ambient data set analyzed for that receptor (i.e., ozone conducive meteorology). The EPA also recognizes that previously experienced meteorological conditions (e.g., dominant wind direction, temperatures, air mass patterns) promoting ozone formation that led to maximum concentrations in the measured data may reoccur in the future. The maximum design value gives a reasonable

²⁶ See *North Carolina v. EPA*, 531 F.3d 896, 910-11 (D.C. Cir. 2008) (holding that the EPA must give “independent significance” to each prong of CAA section 110(a)(2)(D)(i)(I)).

²⁷ See 81 FR 74504 (October 26, 2016). This same concept, relying on both current monitoring data and modeling to define nonattainment receptor, was also applied in CAIR. See 70 FR at 25241, 25249 (January 14, 2005); see also *North Carolina*, 531 F.3d at 913-14 (affirming as reasonable EPA’s approach to defining nonattainment in CAIR).

²⁸ See 76 FR 48208 (August 8, 2011). CSAPR Update and Revised CSAPR Update also used this approach. See 81 FR 74504 (October 26, 2016) and 86 FR 23054 (April 30, 2021).

projection of future air quality at the receptor under a scenario in which such conditions do, in fact, reoccur. The projected maximum design value is used to identify upwind emissions that, under those circumstances, could interfere with the downwind area's ability to maintain the NAAQS.

Recognizing that nonattainment receptors are also, by definition, maintenance receptors, the EPA often uses the term "maintenance-only" to refer to those receptors that are not nonattainment receptors. Consistent with the concepts for maintenance receptors, as described above, the EPA identifies "maintenance-only" receptors as those monitoring sites that have projected average design values above the level of the applicable NAAQS, but that are not currently measuring nonattainment based on the most recent official design values. In addition, those monitoring sites with projected average design values below the NAAQS, but with projected maximum design values above the NAAQS are also identified as "maintenance only" receptors, even if they are currently measuring nonattainment based on the most recent official design values. Consistent with the methodology described for nonattainment, those sites that are currently measuring ozone concentrations below the level of the applicable NAAQS, but that are projected to be nonattainment based on the average or maximum design values, are identified as maintenance-only receptors.

3. Step 2 of the 4-Step Interstate Transport Framework

In Step 2, the EPA quantifies the contribution of each upwind state to each receptor in the 2023 analytic year. The contribution metric used in Step 2 is defined as the average impact from each state to each receptor on the days with the highest ozone concentrations at the receptor based on the 2023 modeling. If a state's contribution value does not equal or exceed the threshold of 1 percent of the NAAQS (i.e., 0.70 ppb for the 2015 8-hour ozone NAAQS), the upwind state is not "linked" to a downwind air quality problem, and the EPA, therefore, concludes that the state does not significantly contribute to nonattainment or interfere with maintenance of the NAAQS in the downwind states. However, if a state's contribution equals or

exceeds the 1 percent threshold, the state's emissions are further evaluated in Step 3, considering both air quality and cost as part of a multi-factor analysis, to determine what, if any, emissions might be deemed "significant" and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

The EPA is proposing to rely in the first instance on the 1 percent threshold for the purpose of evaluating a state's contribution to nonattainment or maintenance of the 2015 8-hour ozone NAAQS (i.e., 0.70 ppb) at downwind receptors. This is consistent with the Step 2 approach that the EPA applied in CSAPR for the 1997 ozone NAAQS, which has subsequently been applied in the CSAPR Update when evaluating interstate transport obligations for the 2008 ozone NAAQS. The EPA continues to find 1 percent to be an appropriate threshold. For ozone, as the EPA found in the Clean Air Interstate Rule (CAIR), CSAPR, and CSAPR Update, portion of the nonattainment problems from anthropogenic sources in the U.S. results from the combined impact of relatively small contributions from many upwind states, along with contributions from in-state sources and, in some cases, substantially larger contributions from a subset of particular upwind states. The EPA's analysis shows that much of the ozone transport problem being analyzed in this proposed rule is still the result of the collective impacts of contributions from many upwind states. Therefore, application of a consistent contribution threshold is necessary to identify those upwind states that should have responsibility for addressing their contribution to the downwind nonattainment and maintenance problems to which they collectively contribute. Continuing to use 1 percent of the NAAQS as the screening metric to evaluate collective contribution from many upwind states also allows the EPA (and states) to apply a consistent framework to evaluate interstate emissions transport under the interstate transport provision from one NAAQS to the next. *See* 81 FR at 74518. *See also* 86 FR at 23085 (reviewing and explaining rationale from CSAPR; 76 FR at 48237-38. (for selection of 1 percent threshold)).

The EPA's August 2018 memorandum recognized that in certain circumstances, a state may be able to establish that an alternative contribution threshold of 1 ppb is justifiable. Where a

state relies on this alternative threshold, and where that state determined that it was not linked at Step 2 using the alternative threshold, the EPA will evaluate whether the state provided a technically sound assessment of the appropriateness of using this alternative threshold based on the facts and circumstances underlying its application in the particular SIP submission.

4. Step 3 of the 4-Step Interstate Transport Framework

Consistent with the EPA's longstanding approach to eliminating significant contribution or interference with maintenance, at Step 3, states linked at steps 1 and 2 are generally expected to prepare a multifactor assessment of potential emissions controls. The EPA's analysis at Step 3 in prior Federal actions addressing interstate transport requirements has primarily focused on an evaluation of cost-effectiveness of potential emissions controls (on a marginal cost-per-ton basis), the total emissions reductions that may be achieved by requiring such controls (if applied across all linked upwind states), and an evaluation of the air quality impacts such emissions reductions would have on the downwind receptors to which a state is linked; other factors may potentially be relevant if adequately supported. In general, where the EPA's or alternative air quality and contribution modeling establishes that a state is linked at steps 1 and 2, it will be insufficient at Step 3 for a state merely to point to its existing rules requiring control measures as a basis for approval. In general, the emissions-reducing effects of all existing emissions control requirements are already reflected in the air quality results of the modeling for steps 1 and 2. If the state is shown to still be linked to one or more downwind receptor(s), states must provide a well-documented evaluation determining whether their emissions constitute significant contribution or interference with maintenance by evaluating additional available control opportunities by preparing a multifactor assessment. While the EPA has not prescribed a particular method for this assessment, the EPA expects states at a minimum to present a sufficient technical evaluation. This would typically include information on emissions sources, applicable control technologies, emissions reductions, costs, cost effectiveness, and downwind

air quality impacts of the estimated reductions, before concluding that no additional emissions controls should be required.²⁹

5. Step 4 of the 4-Step Interstate Transport Framework

At Step 4, states (or the EPA) develop permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at Step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. For a state linked at steps 1 and 2 to rely on an emissions control measure at Step 3 to address its interstate transport obligations, that measure must be included in the state's SIP so that it is permanent and federally enforceable. *See* CAA section 110(a)(2)(D) ("Each such [SIP] shall . . . contain adequate provisions . . ."). *See also* CAA 110(a)(2)(A); *Committee for a Better Arvin v. U.S. E.P.A.*, 786 F.3d 1169, 1175-76 (9th Cir. 2015) (holding that measures relied on by state to meet CAA requirements must be included in the SIP).

II. SIP Submission Addressing Interstate Transport of Air Pollution for the 2015 8-hour ozone NAAQS

On June 10, 2019, the Missouri Department of Natural Resources' Air Pollution Control Program (MoDNR) made a SIP submission to address interstate transport of air pollution for the 2015 8-hour ozone NAAQS. MoDNR's good neighbor SIP submission for the 2015 ozone NAAQS relied on the EPA's four-step approach and corresponding memoranda for determining obligations for upwind states to limit transported air pollution to downwind states. The State concluded that emissions from sources or emissions activity in Missouri will not contribute significantly to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any downwind states.

²⁹ As examples of general approaches for how such an analysis could be conducted for their sources, states could look to the CSAPR Update, 81 FR 74504, 74539-51; CSAPR, 76 FR 48208, 48246-63; CAIR, 70 FR 25162, 25195-229; or the NO_x SIP Call, 63 FR 57356, 57399-405. *See also* Revised CSAPR Update, 86 FR 23054, 23086-23116. Consistently across these rulemakings, the EPA has developed emissions inventories, analyzed different levels of control stringency at different cost thresholds, and assessed resulting downwind air quality improvements.

In its analysis, the state relied on the EPA’s modeling released with the March 2018 memorandum to identify nonattainment and maintenance receptors in 2023 (Step 1). The State also relied on the EPA’s modeling from the March 2018 memorandum to identify which monitors were then linked to emissions from Missouri. In its submission, the MoDNR identified all of the nonattainment and maintenance receptors to which Missouri was projected to contribute more than 0.70 ppb to the 2023 DV. Table 1 provides information on the six nonattainment and maintenance receptors identified by the MoDNR.

Table 1: 2023 Average and Maximum Design Values at Downwind Receptors with Missouri Contributions Larger than 0.70 ppb

Site (Monitor, County, State)	2023 Average DV (ppb)	2023 Maximum DV (ppb)	Missouri Contribution (ppb)	Comments
260050003, Allegan, MI	69.0	71.7	2.61	Maintenance receptor
261630019, Wayne, MI	69.0	71.0	0.92	Maintenance receptor
484392003, Brazoria, TX	74.0	74.9	0.88	Nonattainment receptor
482011039, Harris, TX	71.8	73.5	0.88	Nonattainment receptor
550790085 Milwaukee, WI	71.2	73.0	0.93	Nonattainment receptor
551170006, Sheboygan, WI	72.8	75.1	1.37	Nonattainment receptor

The state analyzed each of the six receptors in Table 1 using information in the EPA’s 2018 guidance memoranda described above. For the two receptors in Texas, the state observed that the total upwind state contribution is approximately 13 ppb to both of these Texas receptors and that Texas’ in-state contribution to these two receptors is 26 ppb to the Brazoria County receptor and 22.6 ppb to the Harris County receptor. The MoDNR combined the contributions from initial/boundary conditions with the contribution from biogenic emissions to show that the contribution from these two categories is over 52 ppb, at these two receptors. Based on this information, the MoDNR claimed that the ozone problems at these two receptors are not caused

by upwind U.S. anthropogenic emissions from other states, but rather that in-state contributions, natural ozone concentrations, and international emissions are the likely significant contributors to the problem at these two sites.

The MoDNR also noted that its contribution to the projected 2023 ozone DV at the two Texas receptors is 0.88 ppb. The MoDNR then referenced statements in the EPA's August 2018 memorandum on the use of alternative thresholds that a 1 ppb threshold would generally capture a substantial amount of transported contribution from upwind states to the downwind monitors. The MoDNR concluded that 1 ppb is, therefore, an appropriate alternative screening threshold for evaluating whether emissions in their state are linked to the ozone problems at these two receptors. Based on this alternative threshold, the State determined that it will not contribute significantly to these nonattainment receptors in 2023. The MoDNR then concluded that its SIP sufficiently addresses the good neighbor obligation for the 2015 ozone NAAQS with respect to these two Texas receptors based only on its Step 2 weight of evidence analysis.

For the Milwaukee, Wisconsin receptor, the MoDNR noted that its projected contribution to this receptor is 0.93 ppb, and thus less than 1 ppb. The State observed that the 1 ppb threshold would capture 79.4 percent of the total contribution from all upwind states and that the contribution captured by the 1 ppb threshold is 83 percent of the amount captured by the 0.70 ppb threshold at this receptor. The state asserted that the 1 ppb threshold would capture a substantial amount of total upwind states' contribution to ozone concentrations at this receptor, which will lead to meaningful emission reductions to ensure attainment of the NAAQS at this monitor in 2023. Therefore, the MoDNR relied on a 1 ppb threshold to conclude that its existing SIP sufficiently addresses the good neighbor obligation for the 2015 ozone NAAQS with respect to this receptor.

For the Wayne, Michigan site, the state observed that the 1 ppb threshold captures 61.8 percent of total upwind state contributions and the contribution captured by the 1 ppb threshold would constitute 92.2 percent of the total contribution that would be captured by the 0.70 ppb

threshold. The state asserted that the 1 ppb threshold will capture a substantial amount of upwind states' contribution to the ozone concentrations at this site, which will lead to meaningful emission reductions that will help ensure attainment of the NAAQS at this receptor in 2023. The MoDNR noted that its projected contribution to the Wayne, Michigan receptor is 0.92 ppb, and thus less than 1 ppb. Therefore, the MoDNR concluded that its existing SIP sufficiently addresses the good neighbor obligation for the 2015 ozone NAAQS with respect to this receptor based only on this Step 2 weight of evidence analysis.

For the Sheboygan, Wisconsin site, the State observed that the 1 ppb threshold would capture 79.4 percent of the total upwind contributions and that a 2 ppb threshold would capture 68.2 percent of the total upwind state contributions. The State also observed that an alternative 2 ppb threshold would capture 85.9 percent of the upwind state contributions captured under a 1 ppb threshold. Using these data, the MoDNR asserted that a 2 ppb threshold is appropriate because it would capture nearly 70 percent of the total upwind state contributions and thus would result in meaningful emission reductions that will help to ensure attainment of the NAAQS at the site by 2023. The state also asserted that the primary contributors to the projected ozone concentrations at the monitor in Sheboygan include emissions from Illinois, Indiana, and Wisconsin. The MoDNR cited the EPA modeling projecting that emissions from these states would contribute a combined 31.93 ppb in 2023 to the Sheboygan receptor.

For the Sheboygan receptor, the MoDNR also pointed to the Lake Michigan Air Director's Consortium's (LADCO's) interstate transport modeling results for the 2015 ozone NAAQS. The State noted that LADCO's analysis also indicates that the ozone levels at the Wisconsin shoreline of Lake Michigan are heavily affected by the emissions from Illinois, Indiana, and Wisconsin.³⁰

³⁰ Interstate Transport Modeling for the 2015 Ozone National Ambient Air Quality Standard, the technical support document (TSD), https://www.ladco.org/wp-content/uploads/Documents/Reports/TSDs/O3/LADCO_2015O3iSIP_TSD_13Aug2018.pdf

The MoDNR further pointed out that the other monitoring site in Sheboygan County (551170009), which is a few miles further inland than the Sheboygan nonattainment receptor, has no projected problems with attaining and maintaining compliance with the 2015 ozone NAAQS. The MoDNR concluded that the nonattainment receptor in Sheboygan is heavily influenced by local transport emissions and lake breeze effects over Lake Michigan. The State asserted that use of a 2 ppb threshold would capture a substantial amount of upwind states' contribution to the ozone concentrations at this site, which will lead to meaningful emission reductions that will help ensure attainment of the NAAQS at this monitor in 2023. The MoDNR noted that its projected contribution to the Sheboygan, Wisconsin receptor is 1.37 ppb, which is less than 2 ppb. Therefore, the MoDNR concluded that its existing SIP sufficiently addresses the good neighbor obligation for the 2015 ozone NAAQS with respect to the Sheboygan receptor based only on this Step 2 weight of evidence analysis.

For the Allegan, Michigan receptor, the MoDNR used an analysis based on information in the EPA's October 2018 memorandum on alternative approaches for identifying maintenance receptors to claim that the Allegan monitoring site will not be a receptor in 2023. Specifically, rather than rely upon the EPA's projected 2023 maximum design value for identifying maintenance receptors, the state used an alternative approach that included projected 2023 ozone concentrations based on a 2-year base period (2010-2011), a 3-year base period (2009-2011) and a 4-year base period (2009-2012) to demonstrate that the Allegan monitoring site would attain the standard by 2023. To support the use of these alternative base periods, the State provided an analysis for the three considerations outlined in the August 2018 memorandum: (i) meteorological conditions in the area of the monitoring site were conducive to ozone formation during the alternative base period design value used for projections; (ii) ozone concentrations have been trending downward at the site since 2011 (and ozone precursor emissions of NO_x and VOCs have also decreased); and (iii) emissions are expected to continue to decline in the upwind and downwind states out to the attainment date of the site. The MoDNR noted that ozone

concentrations during the summer of 2009 were well below normal for the state of Michigan despite having a large number of days during the ozone season where they claim that meteorology was conducive to ozone formation. The MoDNR also noted that the summer of 2012 was among the most ozone conducive summers across the entire Midwestern portion of the country. MoDNR suggested that the variation in the degree of ozone conducive meteorology between 2009 and 2012 would counterbalance in the alternative baseline period.

The State provided an analysis showing ozone concentrations trending down since 2012 at the Allegan monitor. The State also provided the total statewide anthropogenic NO_x and VOC emissions (ozone precursors) in Michigan, Missouri, and two neighboring states that are upwind of the Allegan monitor during 2011 and 2017 (i.e., Illinois and Indiana), which showed that emissions in all four of these states went down during this time period.

The MoDNR concluded that the Allegan receptor meets all the criteria listed in the EPA October memorandum relating to alternative methods for identifying maintenance receptors. Based on this analysis, the MoDNR asserted that the Allegan Michigan monitor should not be a maintenance receptor for purposes of the 2015 ozone NAAQS. Therefore, the State found that the Missouri' existing SIP fully addresses the CAA good neighbor obligation with respect to the Allegan, Michigan receptor.

Based on the analysis above, the MoDNR concluded that its current SIP adequately addresses the state's obligation under CAA section 110(a)(2)(D)(i)(I) (the good neighbor provision) with respect to the 2015 ozone NAAQS. The MoDNR stated that it has demonstrated that its SIP submittal ensures that emissions in Missouri will not significantly contribute to nonattainment or interfere with maintenance of the 2015 ozone NAAQS in any downwind state. Based on this conclusion, the MoDNR concluded its analysis at Step 2 of the 4-step interstate transport framework and provided no analysis for steps 3 or 4.

III. EPA Evaluation

The EPA is proposing to find that the June 10, 2019, SIP submission from the MoDNR does not meet the State's obligations with respect to prohibiting emissions that contribute significantly to nonattainment or interfere with maintenance of the 2015 8-hour ozone NAAQS in any other state based on the EPA's evaluation of the SIP submission using the 4-step interstate transport framework, and the EPA is therefore proposing to disapprove Missouri's submission.

A. Missouri

1. Evaluation of information provided by the MoDNR regarding Step 1

At Step 1 of the 4-Step interstate transport framework, the MoDNR relied on the EPA modeling released in the March 2018 memorandum to identify nonattainment and maintenance receptors in 2023. As correctly noted in the MoDNR SIP submittal, the EPA's prior analysis indicated that the State was linked to six nonattainment and/or maintenance receptors in three downwind states in 2023 (identified in Table 1 of this action). In its October 2018 memorandum on alternative maintenance receptors, the EPA suggested that States could provide meteorological data, among other data, to support potential alternative methodologies or flexibilities to identify maintenance receptors. The MoDNR utilized this flexibility to eliminate the Allegan, Michigan maintenance receptor (monitor ID 260050003) based on the use of alternative base year periods. The State considered three alternative base periods as a basis for projecting design values in 2023. These based periods include (1) a 2-year base period using 4th high ozone concentrations in 2010 and 2011, (2) a 3-year base year period from 2009-2011, and (3) a 4-year base year period from 2009-2012. As an initial matter, design values, by definition are based on the average of the 4th highest maximum daily 8-hour ozone concentration in three consecutive years. The "pseudo" design values calculated by the State using 2 years of data, when data for the third year (i.e., 2009) were clearly available, and using 4 years of data do not constitute alternative design values. In this regard, the approach by the State using these two alternatives runs counter to the approach identified in the October 2018 memorandum: "...EPA

believes that a state may, in some cases, use a *design value* from the base period that is not the maximum design value.”

The State also provided information and analysis of meteorological data to attempt to establish that all years that constitute the 2011 design value (i.e., the average of the 4th high values in 2009, 2010, and 2011) were conducive to ozone formation. The State’s analysis noted that the summer of 2009 was well below normal for average temperatures, but highlighted that data from Western Michigan Regional Airport national weather service site showed that a number of days in summer of 2009 were conducive to ozone formation. Overall, the state identified 25 days between May and September of 2009 that it considered conducive to ozone formation based on the criteria that the temperature reached 80 degrees Fahrenheit or greater, no precipitation occurred, and the daily average wind speed was less than 5 miles per hour. In the EPA’s review, we find the State did not sufficiently demonstrate that all years within the alternative base period were conducive to ozone formation. As the State noted, the summer of 2009 was abnormally cool in Michigan. While the State also analyzed local meteorological data (temperature, precipitation, wind speed) near the Allegan, Michigan monitor to identify 25 days that it considered conducive to ozone formation based on surface temperatures, wind speed and precipitation, the State did not provide any technical analysis to demonstrate a statistically significant relationship between high ozone concentrations at the Allegan receptor and the temperature, precipitation, and wind speed criteria used in the submittal to define ozone conducive conditions for this receptor. In addition, the State’s evaluation did not discuss or consider how other meteorological factors identified in the October 2018 memorandum such as humidity, solar radiation, vertical mixing, and/or other meteorological indicators such as cooling-degree days confirm whether conditions affecting the monitor may have been conducive to ozone formation in 2009. The supplemental information provided in the October 2018 memorandum, which included temperature anomalies by state and region of the U.S. and annual state-wide average June-August temperature rankings, clearly highlight that the summer of 2009

was abnormally cool in Michigan and the Great Lakes Region. Therefore, the EPA finds that not all years within the alternative base period used by the State (i.e., 2009-2011) were conducive to ozone formation, especially given the abnormally cold temperatures seen in the summer of 2009. Accordingly, in view of the guidance included in the October 2020 memorandum, it was not appropriate for the state to have eliminated the Allegan, Michigan receptor as a maintenance receptor at Step 1 of the 4-step interstate transport framework on this basis.

Further, the MoDNR's attempt to eliminate this receptor on the basis of this analysis did not provide any basis to eliminate the other receptors to which the EPA's modeling suggested the state was linked. The EPA's most recent modeling, discussed further in section III.A.3, confirms that the existence of several receptors to which the state is linked. The EPA therefore proposes to proceed to evaluate the submittal at Step 2.

2. Evaluation of information provided by the State regarding Step 2

As an initial matter, the EPA disagrees with the arguments made by MoDNR based on the ostensible "causation" of the projected attainment and maintenance problems at the receptors in Brazoria County and Harris County in Texas. While it is correct that impacts from various sources, such as in-state contributions, background ozone concentrations, and international emissions, are often themselves significant contributors to attainment and maintenance problems at receptors for the 2015 ozone NAAQS, this does not address the question of whether there are also interstate transport impacts from emissions sources or activities in Missouri that significantly contribute to nonattainment, or interfere with maintenance, in any other state. This question is not one of causation, but rather of whether there is significant contribution as contemplated in CAA section 110(a)(2)(D)(i)(I). The EPA's 4-step interstate transport framework is intended to evaluate whether there are emissions that the State must address in its SIP to meet this requirement for purposes of the 2015 ozone NAAQS.

The State also utilized a 1 ppb threshold at Step 2 for the receptors in Wayne Michigan, Milwaukee, Wisconsin and both Texas receptors to evaluate whether the state was "linked" to a

projected downwind nonattainment or maintenance receptor. As discussed in the EPA's August 2018 memorandum, with appropriate additional analysis it may be reasonable for states to use a 1 ppb contribution threshold, instead of the 1 percent of the NAAQS threshold for the purposes of identifying linkages to appropriate downwind receptors. In some cases, MoDNR argued for application of the alternative 1 ppb threshold, by presenting the different numerical percentages of downwind impacts that the respective thresholds would result in, and then asserting that the percentages of upwind contribution captured from the 1 ppb threshold would be sufficiently substantial to justify its use for Missouri.

For the Wayne, Michigan receptor, MoDNR observed that application of a 1 ppb threshold would capture 61.8 percent of total upwind state contributions, and that the contribution captured by the 1 ppb threshold would constitute 92.2 percent of the total contribution that would be captured by application of the 0.70 ppb threshold. The State thus argued that use of a 1 ppb threshold instead of a 1% of the NAAQS threshold will capture a substantial amount of upwind states' contribution to the ozone concentrations at this site. Using this alternative threshold, MoDNR stated that the projected Missouri contribution to the Wayne, Michigan receptor is 0.92 ppb, and thus less than 1 ppb. MoDNR made a comparable argument for the Milwaukee, Wisconsin receptor (79.4 percent of the total contribution from all upwind states and that the contribution captured by the 1 ppb threshold is 83 percent of the amount captured by the 0.70 ppb threshold). For the receptors in Brazoria County and Harris County, Texas, the MoDNR did not provide any additional analyses to determine the appropriateness of the application of the 1 ppb threshold at either of these receptors, and simply referred to the August 2018 memorandum as evidence to support the use of a 1 ppb threshold at these receptors. Rather than a quantitative comparison, MoDNR made qualitative statements to the effect that a 1 ppb threshold would be appropriate given other considerations, such as the impacts of local or international sources.

However, the EPA's memorandum did not indicate that this type of information alone was determinative of whether an alternative threshold was in fact appropriate to justify use of a threshold in lieu of the 0.70 ppb level. Rather, the EPA determined that by capturing a percentage of upwind state emissions comparable to the amount captured at 1 percent, the alternative threshold *may* be appropriate, indicating that a more determinative conclusion of appropriateness would require further analysis. The MoDNR did not provide any further technical justification to make that determination.

The EPA notes that in each case, the use of the alternative 1 ppb threshold would have the result of reducing the amount of cumulative upwind state emissions that would be captured. While the EPA does not, in this action, approve of the state's application of the 1 ppb threshold, because the state has linkages greater than 1 ppb to projected downwind nonattainment or maintenance receptors, the state's use of this alternative threshold at Step 2 of the 4-step interstate framework would not alter our review and proposed disapproval of this SIP submittal.

The EPA here shares further evaluation of its experience since the issuance of the August 2018 memorandum regarding use of alternative thresholds at Step 2. This experience leads the Agency to now believe it may not be appropriate to continue to attempt to recognize alternative contribution thresholds at Step 2. The August 2018 memorandum stated that "it may be reasonable and appropriate" for states to rely on an alternative threshold of 1 ppb at Step 2.³¹ However, the EPA also indicated that "air agencies should consider whether the recommendations in this guidance are appropriate for each situation." Following receipt and review of 49 good neighbor SIP submittals for the 2015 8-hour ozone NAAQS, the EPA's experience has been that nearly every state that attempted to rely on a 1 ppb threshold did not provide sufficient information and analysis to support a determination that an alternative threshold was reasonable or appropriate for that state.

³¹ August 2018 memo at 4.

For instance, in nearly all submittals, the states did not provide the EPA with analysis specific to their state or the receptors to which its emissions are potentially linked. In one case, the proposed approval of Iowa's SIP submittal, the EPA expended its own resources to attempt to supplement the information submitted by the state, in order to more thoroughly evaluate the state-specific circumstances that could support approval.³² It was at the EPA's sole discretion to perform this analysis in support of the state's submittal, and the Agency is not obligated to conduct supplemental analysis to fill the gaps whenever it believes a state's analysis is insufficient. The Agency no longer intends to undertake supplemental analysis of SIP submittals with respect to alternative thresholds at Step 2 for purposes of the 2015 ozone NAAQS.

Furthermore, the EPA's experience since 2018 is that allowing for alternative Step 2 thresholds may be impractical or otherwise inadvisable for a number of additional policy reasons. For a regional air pollutant such as ozone, consistency in requirements and expectations across all states is essential. Based on its review of submittals to-date and after further consideration of the policy implications of attempting to recognize an alternative Step 2 threshold for certain states, the Agency now believes the attempted use of different thresholds at Step 2 with respect to the 2015 ozone NAAQS raises substantial policy, consistency, and practical implementation concerns.³³ The availability of different thresholds at Step 2 has the potential to result in inconsistent application of good neighbor obligations based solely on the strength of a state's SIP submittal at Step 2 of the 4-step interstate transport framework. From the perspective of ensuring effective regional implementation of good neighbor obligations, the more important analysis is the evaluation of the emissions reductions needed, if any, to address a state's significant contribution after consideration of a multifactor analysis at Step 3, including a

³² *Air Plan Approval; Iowa; Infrastructure State Implementation Plan Requirements for the 2015 Ozone National Ambient Air Quality Standard*, 85 FR 12232 (March 2, 2020). The Agency received adverse comment on this proposed approval and has not taken final action with respect to this proposal.

³³ We note that Congress has placed on the EPA a general obligation to ensure the requirements of the CAA are implemented consistently across states and regions. *See* CAA section 301(a)(2). Where the management and regulation of interstate pollution levels spanning many states is at stake, consistency in application of CAA requirements is paramount.

detailed evaluation that considers air quality factors and cost. Where alternative thresholds for purposes of Step 2 may be “similar” in terms of capturing the relative amount of upwind contribution (as described in the August 2018 memorandum), nonetheless, use of an alternative threshold could allow certain states to avoid further evaluation of potential emission controls while other states must proceed to a Step 3 analysis. This can create significant equity and consistency problems among states.

Further, it is not clear that national ozone transport policy is best served by allowing for less stringent thresholds at Step 2. The EPA recognized in the August 2018 memo that there was some similarity in the amount of total upwind contribution captured (on a nationwide basis) between 1 percent and 1 ppb. However, the EPA notes that while this may be true in some sense, that is hardly a compelling basis to move to a 1 ppb threshold. Indeed, the 1 ppb threshold has the disadvantage of losing a certain amount of total upwind contribution for further evaluation at Step 3 (e.g., roughly seven percent of total upwind state contribution was lost according to the modeling underlying the August 2018 memorandum³⁴; in the EPA’s updated modeling, the amount lost is five percent). Considering the core statutory objective of ensuring elimination of all significant contribution to nonattainment or interference of the NAAQS in other states and the broad, regional nature of the collective contribution problem with respect to ozone, there does not appear to be a compelling policy imperative in allowing some states to use a 1 ppb threshold while others rely on a 1 percent of NAAQS threshold.

Consistency with past interstate transport actions such as CSAPR, and the CSAPR Update and Revised CSAPR Update rulemakings (which used a Step 2 threshold of 1 percent of the NAAQS for two less stringent ozone NAAQS), is also important. Continuing to use a 1 percent of NAAQS approach ensures that as the NAAQS are revised and made more stringent, an appropriate increase in stringency at Step 2 occurs, so as to ensure an appropriately larger

³⁴ See August 2018 memo, at 4.

amount of total upwind-state contribution is captured for purposes of fully addressing interstate transport. *Accord* 76 FR 48237-38.

Therefore, notwithstanding the August 2018 memorandum's recognition of the potential viability of alternative Step 2 thresholds, and in particular, a potentially applicable 1 ppb threshold, the EPA's experience since the issuance of that memo has revealed substantial programmatic and policy difficulties in attempting to implement this approach. Nonetheless, the EPA is not, at this time, rescinding the August 2018 memorandum. The EPA invites comment on this broader discussion of issues associated with alternative thresholds at Step 2. Depending on comment and further evaluation of this issue, the EPA may determine to rescind the August 2018 memorandum in the future.

MoDNR used two arguments at Step 2 for excluding the nonattainment receptor in Sheboygan, Wisconsin, (Monitor ID: 551170006). First, the State utilized a 2 ppb threshold at Step 2 to identify whether the state was "linked" to this receptor. Second, the state argued that any reductions from Missouri would have a de minimis or minimal effect on air quality improvements at this receptor due to the larger impacts from other states such as Wisconsin, Illinois and Indiana. The EPA discusses both of these arguments in this section.

In its analysis, the state argued that because a 2 ppb threshold would capture 68.2% of cumulative upwind state contributions at the Sheboygan receptor, similar to the "approximately 70 percent of total upwind contribution" captured on average nationwide at the 1 ppb threshold the EPA identified in the August 2018 memorandum, a 2 ppb threshold is appropriate to use at this receptor. While the EPA had determined that an alternative threshold that would capture a sufficient percentage of upwind state emissions comparable to the amount that would be captured at the level of 1 percent of the NAAQS *may* be appropriate, the Agency also indicated that more analysis would be needed to reach a determinative conclusion of appropriateness. As explained with respect to the alternative 1 ppb threshold that MoDNR sought to use for the for

the receptors in Wayne Michigan, Milwaukee, Wisconsin and both Texas receptors, it did not provide any further technical justification to make the determination.

As explained with respect to the potential use of an alternative 1 ppb threshold, the EPA's experience since the issuance of the 2018 memorandum discussing the issue has revealed substantial programmatic and policy difficulties in attempting to implement this approach even for a 1 ppb threshold. At no point did the EPA suggest that a 2 ppb threshold might be appropriate for this purpose under any circumstances. Such a threshold would be higher than the threshold that the EPA has historically used in interstate transport rules that courts have approved (i.e., 1 percent of the NAAQS at issue), or that the EPA has considered even potentially appropriate if it were to achieve functionally the same air quality impacts (i.e., 1 ppb).

The second argument that the state used to exclude the Sheboygan, Wisconsin receptor in Step 2 was related to emissions from other states. The state argued that the primary contributors to the projected ozone concentrations in Sheboygan are the upwind states of Illinois and Indiana and the home state itself, Wisconsin. The EPA's 2018 modeling showed these states would contribute a combined 31.93 ppb in 2023 to the Sheboygan receptor. However, the state's reasoning related to Indiana, Illinois and Wisconsin emissions is inapplicable to the requirements of CAA section 110(a)(2)(D)(i)(I). The good neighbor provision requires states and the EPA to address interstate transport of air pollution that *contributes to* downwind states' ability to attain and maintain NAAQS. Whether emissions from other states also contribute to the same downwind air quality issue is irrelevant in assessing whether a downwind state has an air quality problem, or whether the upwind state at issue state is significantly contributing to that problem. The Ozone NAAQS nonattainment and maintenance problems that result from interstate transport are typically the result of cumulative impacts from multiple states. States are not obligated under CAA section 110(a)(2)(D)(i)(I) to reduce emissions only if doing so would be sufficient in isolation to resolve all downwind nonattainment or maintenance problems. Rather,

each state is obligated to eliminate its own “significant contribution” or “interference” with the ability of other states to attain or maintain the NAAQS.

Indeed, the D.C. Circuit in *Wisconsin* specifically rejected petitioner arguments suggesting that upwind states should be excused from good neighbor obligations on the basis that some other source of emissions (whether international or another upwind state) could be considered the “but-for” cause of downwind air quality problem. 938 F.3d 303 at 323-324. The court viewed petitioners’ arguments as essentially an argument “that an upwind State ‘contributes significantly’ to downwind nonattainment only when its emissions are the sole cause of downwind nonattainment.” 938 F.3d 303 at 324. The court explained that “an upwind State can ‘contribute’ to downwind nonattainment even if its emissions are not the but-for cause.” *Id.* at 324-325. *See also Catawba County v. EPA*, 571 F.3d 20, 39 (D.C. Cir. 2009) (rejecting the argument “that ‘significantly contribute’ unambiguously means ‘strictly cause’” because there is “no reason why the statute precludes EPA from determining that [an] addition of [pollutant] into the atmosphere is significant even though a nearby county's nonattainment problem would still persist in its absence”); *Miss. Comm'n on Env'tl. Quality v. EPA*, 790 F.3d 138, 163 n.12 (D.C. Cir. 2015) (observing that the argument that “there likely would have been no violation at all ... if it were not for the emissions resulting from [another source]” is “merely a rephrasing of the but-for causation rule that we rejected in *Catawba County*.”). Therefore, a state is not excused from eliminating its significant contribution on the basis that other states’ emissions also contribute some amount of pollution to the same receptors to which the state is linked. As a result, Step 3 analysis of the 4-Step Interstate Transport Framework is necessary.

Thus, the EPA proposes that MoDNR’s submittal did not adequately justify the use of an alternative threshold or otherwise establish that it should not be considered linked at Step 2. The EPA proposes to apply the 1 percent of NAAQS threshold, consistent with the discussion in this subsection. Under the proposed 1 percent threshold, both in the modeling available to the state at

the time it made its submittal, and under the newly available 2023 modeling discussed below, Missouri is linked to downwind nonattainment and maintenance receptors.³⁵

3. Results of the EPA’s Step 1 and Step 2 modeling and findings for Missouri

As described in section I, the EPA performed air quality modeling to project design values and contributions for 2023 using the 2016v2 emissions platform. The EPA examined these data to determine if emissions in Missouri contribute at or above the threshold of 1 percent of the 2015 8-hour ozone NAAQS (0.70 ppb) to any downwind nonattainment or maintenance receptor in this most recent round of modeling. As shown in Table 2, the data indicate that in 2023, emissions from sources in Missouri contribute greater than 1 percent of the NAAQS to nonattainment or maintenance-only receptors in Racine County and Kenosha County, Wisconsin, and Cook County, Illinois.³⁶ Therefore, based on the EPA’s evaluation of the information submitted by MoDNR, and based on the EPA’s most recent modeling results for 2023, the EPA proposes to find that Missouri is linked at steps 1 and 2 and has an obligation to assess potential emissions reductions from sources or other emissions activity at Step 3 of the 4-Step framework.

Table 2: Missouri Linkage Results Based on the EPA Updated 2023 Modeling					
Receptor ID	Location	Nonattainment/ Maintenance	2023 Average Design Value (ppb)	2023 Maximum Design Value (ppb)	MO Contribution (ppb)
550590025	Kenosha, Wisconsin	Maintenance	69.2	72.3	1.66
550590019	Kenosha, Wisconsin	Nonattainment	72.8	73.7	1.08
170317002	Cook, Illinois	Maintenance	70.1	73.0	0.94
551010020	Racine, Wisconsin	Nonattainment	71.3	73.2	0.92

4. Evaluation of information provided regarding Step 3

³⁵ Because the EPA finds that the MoDNR submittal’s arguments with respect to its linkages in the modeling it relied on are not sufficient or technically justified to conclude the state is not linked to downwind receptors, the EPA can also conclude that the same arguments would not be meritorious even if applied with respect to the receptor linkages the EPA finds in its more recent 2023 modeling using the 2016v2 emissions platform.

³⁶ Design values and contributions at individual monitoring sites nationwide are provide in the file: “2016v2_DVs_state_contributions.xlsx ” which is included in docket ID No. EPA-HQ-OAR-2021-0663.

At Step 3, of the 4-step interstate transport framework, a state's emissions are further evaluated, in light of multiple factors, including air quality and cost considerations, to determine what, if any, emissions significantly contribute to nonattainment or interfere with maintenance and, thus, must be eliminated under CAA section 110(a)(2)(D)(i)(I).

To evaluate effectively which emissions in the state should be deemed "significant" and therefore prohibited, states generally should prepare an accounting of sources and other emissions activity for relevant pollutants and assess potential, additional emissions reduction opportunities and resulting downwind air quality improvements. The EPA has consistently applied this general approach (i.e., Step 3 of the 4-step interstate transport framework) when identifying emissions contributions that the Agency has determined to be "significant" (or interfere with maintenance) in each of its prior Federal, regional ozone transport rulemakings, and this interpretation of the statute has been upheld by the Supreme Court. *See EME Homer City*, 572 U.S. 489, 519 (2014). While the EPA has not directed states that they must conduct a Step 3 analysis in precisely the manner the EPA has done in its prior regional transport rulemakings, state implementation plans addressing the obligations in CAA section 110(a)(2)(D)(i)(I) must prohibit "any source or other type of emissions activity within the State" from emitting air pollutants which will contribute significantly to downwind air quality problems. Thus, states must complete something similar to the EPA's analysis (or an alternative approach to defining "significance" that comports with the statute's objectives) to determine whether and to what degree emissions from a state should be "prohibited" to eliminate emissions that will "contribute significantly to nonattainment in, or interfere with maintenance of" the NAAQS in any other state.

MoDNR did not conduct such an analysis in its SIP submission, as a result of its conclusions pursuant to Step 1 and Step 2 of its analysis with respect to the six receptors that the EPA previously identified. As explained in connection with the evaluation of MoDNR's Step 1 and Step 2 analyses, the EPA disagrees with those analyses and accordingly the State should

have evaluated effectively which emissions in the State should be deemed “significant” and therefore prohibited, in its SIP submission. We therefore propose that MoDNR was required to analyze emissions from the sources and other emissions activity from within the state to determine whether its contributions were significant, and we propose to disapprove its submission because MoDNR failed to do so.

5. Evaluation of information provided regarding Step 4

Step 4 of the 4-step interstate transport framework calls for development of permanent and federally enforceable control strategies to achieve the emissions reductions determined to be necessary at step 3 to eliminate significant contribution to nonattainment or interference with maintenance of the NAAQS. As mentioned previously, Missouri’s SIP submission did not contain an evaluation of additional emission control opportunities (or establish that no additional controls are required), thus, no information was provided at step 4. As a result, the EPA proposes to disapprove Missouri’s submittal on the separate, additional basis that the State has not developed permanent and enforceable emissions reductions necessary to meet the obligations of CAA section 110(a)(2)(d)(i)(I).

6. Conclusion

Based on the EPA’s evaluation of the MoDNR’s SIP submission, the EPA is proposing to find that the MoDNR’s June 10, 2019 SIP submission addressing CAA section 110(a)(2)(D)(i)(I) does not meet the State’s interstate transport obligations, because it fails to contain the necessary provisions to eliminate emissions that will contribute significantly to nonattainment or interfere with maintenance of the 2015 8-hour ozone NAAQS in any other state.

IV. Proposed Action

We are proposing to disapprove the MoDNR’s June 10, 2019 SIP submission pertaining to interstate transport of air pollution which will significantly contribute to nonattainment or interfere with maintenance of the 2015 8-hour ozone NAAQS in other states. Under CAA section 110(c)(1), disapproval would establish a 2-year deadline for the EPA to promulgate a FIP

for Missouri to address the CAA section 110(a)(2)(D)(i)(I) interstate transport requirements pertaining to significant contribution to nonattainment and interference with maintenance of the 2015 8-hour ozone NAAQS in other states, unless the EPA approves a SIP that meets these requirements. Disapproval does not start a mandatory sanctions clock for Missouri.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget for review

B. Paperwork Reduction Act (PRA)

This proposed action does not impose an information collection burden under the PRA because it does not contain any information collection activities

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action merely proposes to disapprove a SIP submission as not meeting the CAA.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. This action does not apply on any Indian reservation land, any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, or non-reservation areas of Indian country. Thus, Executive Order 13175 does not apply to this action.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it merely proposes to disapprove a SIP submission as not meeting the CAA.

H. Executive Order 13211, Actions that Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. This action merely proposes to disapprove a SIP submission as not meeting the CAA.

K. CAA Section 307(b)(1)

Section 307(b)(1) of the CAA governs judicial review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the D.C. Circuit: (i) when the agency action consists of “nationally applicable regulations promulgated, or final actions taken,

by the Administrator,” or (ii) when such action is locally or regionally applicable, if “such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.” For locally or regionally applicable final actions, the CAA reserves to the EPA complete discretion whether to invoke the exception in (ii).³⁷

If the EPA takes final action on this proposed rulemaking the Administrator intends to exercise the complete discretion afforded to him under the CAA to make and publish a finding that the final action (to the extent a court finds the action to be locally or regionally applicable) is based on a determination of “nationwide scope or effect” within the meaning of CAA section 307(b)(1). Through this rulemaking action (in conjunction with a series of related actions on other SIP submissions for the same CAA obligations), the EPA interprets and applies section 110(a)(2)(d)(i)(I) of the CAA for the 2015 ozone NAAQS based on a common core of nationwide policy judgments and technical analysis concerning the interstate transport of pollutants throughout the continental U.S. In particular, the EPA is applying here (and in other proposed actions related to the same obligations) the same, nationally consistent 4-step framework for assessing good neighbor obligations for the 2015 ozone NAAQS. The EPA relies on a single set of updated, 2016-base year photochemical grid modeling results of the year 2023 as the primary basis for its assessment of air quality conditions and contributions at steps 1 and 2 of that framework. Further, the EPA proposes to determine and apply a set of nationally consistent policy judgments to apply the 4-step framework. The EPA has selected a nationally uniform analytic year (2023) for this analysis and is applying a nationally uniform approach to nonattainment and maintenance receptors and a nationally uniform approach to contribution threshold analysis.³⁸ For these reasons, the Administrator intends, if this proposed action is

³⁷ In deciding whether to invoke the exception by making and publishing a finding that an action is based on a determination of nationwide scope or effect, the Administrator takes into account a number of policy considerations, including his judgment balancing the benefit of obtaining the D.C. Circuit’s authoritative centralized review versus allowing development of the issue in other contexts and the best use of Agency resources.

³⁸ A finding of nationwide scope or effect is also appropriate for actions that cover states in multiple judicial circuits. In the report on the 1977 Amendments that revised section 307(b)(1) of the CAA, Congress noted that the

finalized, to exercise the complete discretion afforded to him under the CAA to make and publish a finding that this action is based on one or more determinations of nationwide scope or effect for purposes of CAA section 307(b)(1).³⁹

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Ozone.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: February 9, 2022.

Meghan A. McCollister,
Regional Administrator,
Region 7.

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Administrator's determination that the "nationwide scope or effect" exception applies would be appropriate for any action that has a scope or effect beyond a single judicial circuit. See H.R. Rep. No. 95-294 at 323, 324, reprinted in 1977 U.S.C.C.A.N. 1402-03.

³⁹ The EPA may take a consolidated, single final action on all of the proposed SIP disapproval actions with respect to obligations under CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS. Should EPA take a single final action on all such disapprovals, this action would be nationally applicable, and the EPA would also anticipate, in the alternative, making and publishing a finding that such final action is based on a determination of nationwide scope or effect.